

## ***CTE Standards Unpacking*** ***Introduction to Sports Medicine***

**Course:** Introduction to Sports Medicine

**Course Description:** The Introduction to Sports Medicine Class is designed for students interested in fields such as athletic training, physical therapy, medicine, fitness, exercise physiology, kinesiology, nutrition and other sports medicine related fields. This class includes both classroom work as well as hands-on application in order to provide students with an avenue to explore these fields. Through these connections students will understand the importance that exercise, nutrition, treatment modalities, and rehabilitation play in athletic health. Students will study basic anatomy and the psychological impact of athletic injuries along with assessment and treatment techniques as they apply to athletic injuries.

**Career Cluster:** Health Science

**Prerequisites:** Recommended: Anatomy and Physiology

**Program of Study Application:** Introduction to Sports Medicine is a pathway course in the Health Science career cluster, Therapeutic Services pathway. The course would follow participation in one or more cluster courses and/or Gateway to Certified Nursing Assistant. Introduction to Sports Medicine would prepare a student to participate in further pathway courses in the Therapeutic Services pathway or a capstone experience.

<b>INDICATOR #ISM 1: Identify the fundamental aspects of medical terminology, the human body systems, kinesiology and careers related to sports medicine.</b>		
<b>SUB-INDICATOR 1.1 (Webb Level: 2 Skill/Concept):</b> Distinguish differences among careers within sports medicine and explain in detail the education level, credentialing/licensure requirements.		
<b>SUB-INDICATOR 1.2 (Webb Level: 2 Skill/Concept):</b> Interpret medical terms and abbreviations to communicate information.		
<b>SUB-INDICATOR 1.3 (Webb Level: 1 Recall):</b> Identify basic structures and functions of human body systems.		
<b>SUB-INDICATOR 1.4 (Webb Level: 4 Extended Thinking):</b> Analyze concepts of kinesiology in relation to athletic performance.		
<b>Knowledge (Factual):</b> -Careers in Sports Medicine  -Education, credentialing and licensure requirements  -Medical terminology  -Human body systems including muscular,	<b>Understand (Conceptual):</b> -How human body systems interact  -Importance of knowing sports related medical terminology  -The relationship between human anatomy and body movement and function -The ways joint and bone	<b>Do (Application):</b> -Identify major muscle groups  -Refer to Joint Commission official "Do Not Use List" in terms of using entire word rather than abbreviations during client communication -Review case scenarios

<p>skeletal, cardiac</p> <p>-Kinesiology</p> <p>-Body movements and their effect on athletic performance</p>	<p>movement, body motion, and levers can have positive or negative effects on an athlete's performance and development.</p>	<p>involving sport related injuries</p> <p>-Shadow athletic trainer, sports medicine professional</p>
<p><b>Benchmarks:</b></p> <p><i>Students will be assessed on their ability to:</i></p> <ul style="list-style-type: none"> <li>Identify major muscle groups on models, cadavers or mannequins.</li> <li>Given a weight lifting action (e.g. arm curl, bench press, squat), determine the muscles, bones, tendons, and ligaments involved using appropriate medical terminology for the structures and movements.</li> <li>Identify a career of interest within the sports medicine arena and research role and responsibilities of this career, as well as job outlook and income potential.</li> <li>Identify major muscle groups</li> </ul>		
<p><b><i>Academic Connections</i></b></p>		
<p><b>ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):</b></p> <p>HS-LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.</p> <p>RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text</p>	<p><b>Sample Performance Task Aligned to the Academic Standard(s):</b></p> <p>-Use anatomical models to demonstrate how a given motion involves skeletal and muscular systems.</p> <p>-Use proper anatomical terminology to identify muscles and their actions.</p>	

**INDICATOR #ISM 2: Understand injury prevention principles and performance enhancement philosophies**

<b>SUB-INDICATOR 2.1 (Webb Level: 3 Strategic Thinking):</b> Develop a nutrition and hydration plan for an athlete while implementing personal healthy behaviors.		
<b>SUB-INDICATOR 2.2 (Webb Level: 2 Skill/Concept):</b> Describe injury prevention		
<b>SUB-INDICATOR 2.3 (Webb Level: 2 Skill/Concept):</b> Explore and demonstrate safe training practices in sports management		
<b>SUB-INDICATOR 2.4 (Webb Level: 4 Extended Thinking):</b> Compare and contrast performance enhancement philosophies		
<b>Knowledge (Factual):</b> -Electrolytes  -Protein and carbohydrate  -Hydration  -Heat cramps  -Heat stroke  -Heat exhaustion  -Signs and symptoms  -Conditioning principles	<b>Understand (Conceptual):</b> -Proper research is important before using advertised sports enhancement supplements and activities  -Role the human body system plays on performance  -The effects of the environment on training  -Importance of stretching and flexibility in fitness  -Importance of proper gear in preventing injuries and enhancing performance  -How proper conditioning prevents injury and enhances performance	<b>Do (Application):</b> -Compare and contrast injury classifications  -Record health and wellness behaviors through a log (such as: nutrition, weight control, exercise, sleep habits, and prevention of disease)  -Examine the effects of overtraining on the musculoskeletal system, and relate the importance of adopting safe biomechanical practices when training
<b>Benchmarks:</b> <i>Students will be assessed on their ability to:</i> <ul style="list-style-type: none"> <li>• Prepare a training plan for an athlete with regards to their age, gender, and sport of choice</li> <li>• Practice/demonstrate a variety of athletic wraps</li> <li>• Monitor own heartrate before, during and after exercise</li> <li>• Create a warm-up regime for a particular sport/age group</li> <li>• Development of a training room supply and equipment budget</li> <li>• Design training room floorplan</li> </ul>		
<b>Academic Connections</b>		
<b>ELA Literacy and/or Math Standard (if applicable, Science and/or Social</b>	<b>Sample Performance Task Aligned to the Academic Standard(s):</b>	

<p><b>Studies Standard):</b></p> <p>HS-LS1-6: Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.</p> <p>HSG-MG.A.3 Apply geometric methods to solve design problems.</p> <p>SL.4 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.</p>	<p>-Students will critique different diet regimes and enhancement supplements on their efficacy as well as safety. Critiques must include the relationship between the diet/supplements and actual muscle performance with regards to protein manufacture and the attainment of energy.</p> <p>-Design a training room facility using a given area, with a focus on linear measurements.</p> <p>-Utilize multiple sources to develop and present a comprehensive training plan for a chosen athlete.</p>
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<p><b>INDICATOR #ISM 3: Explore and understand common sports injuries, injury management and treatment techniques.</b></p>		
<p><b>SUB-INDICATOR 3.1 (Webb Level: 3 Strategic Thinking):</b> Recognize and explain common injuries and conditions that impact athletic performance.</p>		
<p><b>SUB-INDICATOR 3.2 (Webb Level: 3 Strategic Thinking):</b> Assess common sports injuries to determine treatment modalities</p>		
<p><b>SUB-INDICATOR 3.3 (Webb Level: 4 Extended Thinking):</b> Perform proper treatment techniques of common sports injuries through hands-on application</p>		
<p><b>Knowledge (Factual):</b></p> <ul style="list-style-type: none"> <li>-Concussion</li> <li>-Strain</li> <li>-Sprain</li> <li>-Fracture</li> <li>-Dislocation</li> <li>-Contusion/hematoma</li> </ul>	<p><b>Understand (Conceptual):</b></p> <ul style="list-style-type: none"> <li>-Purpose and how to properly select the correct therapeutic modality</li> <li>-Common injuries have an impact on performance</li> <li>-Early treatment and intervention lead to positive outcomes</li> </ul>	<p><b>Do (Application):</b></p> <ul style="list-style-type: none"> <li>-Demonstrate a variety of athletic wraps on a variety of joints, such as a figure 8 wrap</li> <li>-Identify soft tissue injuries and skin conditions</li> <li>-Recognize abdominal</li> </ul>

<ul style="list-style-type: none"> <li>-Abrasion</li> <li>-Laceration</li> <li>-RICE (rest, ice, compression, elevation)</li> <li>-Inflammation</li> <li>-Range of motion</li> <li>-Wheezing</li> <li>-Respiratory distress</li> <li>-Hyperventilation</li> <li>-Arterial bleeding, capillary bleeding, and venous bleeding</li> <li>-Figure 8 wrap</li> </ul>	<ul style="list-style-type: none"> <li>-The referral process to primary care providers or medical specialties</li> </ul>	<ul style="list-style-type: none"> <li>injuries, bleeding, and shock</li> <li>-Discuss immobilization techniques</li> <li>-Utilize simulations or moulage to "create," treat and prioritize injuries.</li> </ul>
<p><b>Benchmark</b>  <i>Students will be assessed on their ability to</i></p> <ul style="list-style-type: none"> <li>Demonstrate various methods of immobilizing extremities following an athletic injury.</li> <li>Demonstrate how to control bleeding on a variety of open wounds.</li> <li>Apply the RICE acronym when treating a sprained joint</li> <li>Describe treatment for medical conditions such as seizures, fainting, asthma, as well as heat illness and cold exposure</li> <li>Explain an injury assessment</li> <li>Prioritize injuries based on a case scenario.</li> </ul>		
<b>Academic Connections</b>		
<b>ELA Literacy and/or Math Standard (if applicable, Science and/or Social</b>	<b>Sample Performance Task Aligned to the Academic Standard(s):</b>	

<p><b>Studies Standard):</b></p> <p>HS-LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.</p> <p>SL.4 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.</p>	<p>-Describe how the application of cold aids in the reduction of swelling by vasoconstriction or heat aids in muscle relaxation to reduce pain.</p> <p>-Discuss proper immobilization techniques.</p>
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<p><b>INDICATOR #ISM 4: Explore the psychological impact of injury and the healing process on an individual.</b></p>		
<p><b>SUB-INDICATOR 4.1 (Webb Level: 1 Recall):</b> Describe principles of sports psychology.</p>		
<p><b>SUB-INDICATOR 4.2 (Webb Level: 3 Strategic Thinking):</b> Explain possible adaptations that can be made to exercise programs to account for different clients' needs.</p>		
<p><b>Knowledge (Factual):</b></p> <ul style="list-style-type: none"> <li>-Endorphins</li> <li>-Empathy</li> <li>-Burnout</li> <li>-Mental skills of the athlete</li> <li>-Potential mental statuses that follow sports related injury</li> </ul>	<p><b>Understand (Conceptual):</b></p> <ul style="list-style-type: none"> <li>-The impact of participation in sports and exercise affects psychological factors</li> <li>-Variety of strategies to empathetically communicate outcomes</li> <li>-Recognize signs and symptoms of depression and/or suicidal tendencies</li> <li>-Injury related limitations as related to exercise programs</li> <li>-Physical limitations as related to exercise programs</li> </ul>	<p><b>Do (Application):</b></p> <ul style="list-style-type: none"> <li>-Examine potential psychological problems associated with overtraining, including staleness and burnout</li> <li>-Debating the pro's and con's of year round vs seasonal sports participation</li> <li>-Develop an exercise program with adaptations</li> </ul>

	-That principles of sports psychology impact athletic performance, focus, intensity, and self-trust.	
<b>Benchmarks:</b> <i>Students will be assessed on their ability to:</i> <ul style="list-style-type: none"> <li>• Identify the psychological implications of an injury to an athlete.</li> <li>• Modify an exercise program for a variety of individuals, including injured or those at risk of being injured</li> <li>• Develop an exercise plan from a case study or case scenario</li> <li>• Develop a communication plan for a client with speech or hearing challenges who wishes to become more physically active and improve his/her level of wellness</li> </ul>		
<b>Academic Connections</b>		
<b>ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):</b>  9-12-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.  SL.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	<b>Sample Performance Task Aligned to the Academic Standard(s):</b>  -Develop a training and participation plan for an injured athlete to ensure that they return to action in a safe manner. Include the constraints of the athlete as well as the criteria for return.  -Debate the pro's and con's of year round vs seasonal sports participation.	

### Additional Resources

- Choose My Plate- <https://www.choosemyplate.gov/>
- My Fitness Pal- <https://www.myfitnesspal.com/>
- American Psychological Association- <http://www.apa.org/>

- American Red Cross- <http://www.redcross.org>
- American Heart Association- <http://www.heart.org>
- Joint Commission Official 'Do Not Use' List- <https://www.jointcommission.org/>
- HOSA Sports Medicine Competitive Events Guidelines- <http://www.hosa.org/guidelines>
- American Medical Society for Sports Medicine- <https://www.amssm.org/>
- Skills USA- <http://www.skillsusa.org/>
- The American Orthopaedic Society for Sports Medicine- <http://www.sportsmed.org/aossmimis>
- American Osteopathic Academy of Sports Medicine- <http://www.aoasm.org/>
- Sports Medicine Quizlet Flashcards - <https://quizlet.com/subject/sports-medicine/>
- HOTT-Health Occupations for Today & Tomorrow- [Healthcareers.sd.gov](http://Healthcareers.sd.gov)